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The influence of exclusive breastfeeding on the incident of stunting

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ABSTRACT

This study aims to investigate the relationship between exclusive breastfeeding and the incidence of stunting in children. This type of research is quantitative. Research data uses primary data and secondary data. Primary data from questionnaires and observation sheets. Secondary data from journals, books and respondent health data. Data analysis was carried out using the chi-square test to determine the relationship between exclusive breastfeeding and the incidence of stunting. Based on the analysis results, if seen from the sig. chi-square table is greater than 0.05, it can be said that Ho is rejected and Ha is accepted. Thus, it can be concluded that there is a relationship between exclusive breastfeeding and the incidence of stunting. It is hoped that the results of this research can be used as a basis for developing effective intervention programs in dealing with stunting problems in society.

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INTRODUCTION

Malnutrition in childhood is often associated with a deficiency of certain vitamins and minerals which play an important role in micro and macro nutrition. However, apart from that, there are also other aspects that need to be considered. (Krisnana et al., 2020; Rakotomanana et al., 2017; Saeedullah et al., 2021) One thing that is quite relevant is the effect of malnutrition on children's immune systems. Nutrient deficiencies can increase the risk of infectious diseases, such as colds, flu, or even more serious infections, such as pneumonia. Apart from that, malnutrition can also affect children's mental development, thereby hampering their learning and thinking abilities (Sutio, 2017).

Stunting is a condition where a child's physical growth is hampered and is characterized by a decrease in growth rate. This stunting occurs due to a lack of balanced nutritional intake. According to child growth standards from the World Health Organization (WHO), stunting is determined based on the index of body length compared to age or height compared to age with a score of less than -2 SD. The problem of stunting is still an unresolved nutritional problem in Indonesia. The long-term impacts of stunting are very diverse, including impaired physical, mental, intellectual and cognitive development in children. The stunting condition experienced by

children from the age of 5 is difficult to correct, and can continue into adulthood, even increasing the risk of birth of low birth weight (LBW) babies in future generations (Anggraeni et al., 2020).

According to the Study on the Nutritional Status of Toddlers from the Health Research and Development Agency (Balitbangkes), the prevalence of stunting in Indonesia in 2019 was 27.7% (Rosha et al., 2020). Even though this figure is down from the previous year, efforts to prevent stunting need to continue to be carried out to achieve the target of reducing stunting prevalence by 14% by 2024. The research results show that stunting also has an impact on children's cognitive development because it disrupts brain development, which can reduce children's intelligence (Oddo et al., 2019). Other research results show that there is an influence of exclusive breastfeeding on the incidence of stunting (Abantika Bagchi et al., 2021). Other research states that breastfeeding can provide the best nutrition which can reduce the occurrence of stunting (Rakotomanana et al., 2017). In the long term, stunting can cause children to become vulnerable to disease, have low productivity in adulthood, and have a negative impact on a country's economic growth. Stunting cases do not only occur in certain areas, but spread throughout Indonesia (Karana, 2022). Data from the Ministry of Health's Basic Health Research (Riskesdas) and BPS show that stunting cases are found in all regions in 34 provinces in Indonesia (Rosalia et al., 2022). This shows that the problem of stunting is not only limited to the outermost, frontier and underdeveloped areas, but also exists in urban areas with relatively high levels of education and income (Arbie & Labatjo, 2019; Kemenkes, 2018).

This research focuses on research on the effect of exclusive breastfeeding on the incidence of stunting in children. In this study, researchers wanted to explore further whether exclusive breastfeeding has a significant influence on the incidence of stunting. Apart from that, this study also considered other factors that could influence this relationship, such as the duration of exclusive breastfeeding and the frequency of breastfeeding. It is hoped that this research will provide a deeper understanding of the importance of exclusive breastfeeding and the factors that need to be considered in preventing stunting in children.

RESEARCH METHOD

Quantitative research methods have several steps that must be followed (Sugiyono, 2019). First, research begins by formulating research questions that will be answered using numerical data. In this study, the research question that will be answered is regarding the effect of exclusive breastfeeding and early MPASI on the incidence of stunting. Research datawill be obtained from the information of respondents, especially the baby's mother. Breast-feeding will be measured based on the mother's breast-feeding from babies aged 0-6 months. Comparison of baby ages will use the z-score table to determine the category of stunting experienced by the baby, whether they are stunted or not. Data analysiswill use the SPSS application. There are two analysis tests that will be carried out: Bivariate analysis on exclusive breastfeeding and the degree of stunting, as well as MP-ASI and the degree of stunting. Test the relationship between variables using the Chi-Square test for exclusive breastfeeding and the degree of stunting, as well as MP-ASI and the degree of stunting. In quantitative research, the data obtainedwill be analyzed using statistical techniques. The research results will be in the form of generalizations and predictions, regardless of the context of time and situation (Priyatna, 2020; Sugiyono, 2022).

RESULTS AND DISCUSSIONS

Data related to exclusive breastfeeding was obtained from information from respondents, especially mothers of babies. Breast-feeding is measured based on the mother's breast-feeding from babies aged 0-6 months. And there are several cases that occur where babies receive additional food intake other than breast milk from their mothers to fulfill the baby's additional nutrition, but this additional intake occurs at a period of less than 6 months of the baby's age.

		Breastfeeding			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Exclusive breastfeeding	113	94.2	94.2	94.2
	Not Exclusive Breast Milk	7	5.8	5.8	100.0
	Total	120	100.0	100.0	

Table 1. The demographic responden

Researchers carried out univariate analysis with descriptive analysis which was carried out to describe the demographic data studied by making a frequency table for each variable.

Based on the table above, data was obtained that 120 babies aged 0-6 months had their degree of stunting measured. It was stated that babies who were given exclusive breast milk by their mothers consisted of 113 babies or 94.2%. And babies who were not given exclusive breast milk by their mothers consisted of 7 babies or 5.8%.

Tabel 2. Exclusive breastfeeding and degree of stunting

		Breastfeeding		
		Exclusive breastfeeding	Not Exclusive Breast Milk	Total
Degree of Stunting	Mild	16	0	16
	Moderate	35	0	35
	Severe	62	7	69
Total		113	7	120

The table above shows the relationship between breastfeeding and the degree of stunting in babies aged 0-6 months. The results obtained were that of the 120 baby respondents who were categorized as mild stunting with exclusive breastfeeding, there were 16 babies, 35 babies were categorized as moderate stunting with exclusive breastfeeding and 62 babies were categorized as severe stunting with exclusive breastfeeding. As well as 7 babies who experienced severe stunting without exclusive breastfeeding.

Table 3. Exclusive breastfeeding and degree of stunting

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.494a	2	0.064
Likelihood Ratio	8,066	2	0.018
Linear-by-Linear Association	4,477	1	0.034
N of Valid Cases	120		

Based on its use, the chi square test is intended to see the relationship between the variables used in the research being studied. The category if the sig value. < 0.05 then Ho is rejected and Ha is accepted and vice versa. In the test used, it was found that the significance value was 0.64, greater than 0.05, so it could be concluded that Ho was accepted. And the relationship test can be seen from the magnitude of the Chi Square value which is compared with the value from the chi square table using a degree of confidence or significance of 5% or 0.05. From these results the chi square test with manual chi square shows the same results, namely 5.494 or 5.494421. From the comparison it is found that the chi square value of the table is 5.591, in this case it is said that the calculated chi square value is 5.4949 < 5.591 so it can be said that Ho is accepted and Ha is rejected. So the results obtained were that there was no relationship between exclusive breastfeeding and the degree of stunting in this study.

Strengthening from previous journals Saadong et al. (2021) is contrary to the fact that previous research conducting regression analysis shows that exclusive breastfeeding has an impact on the occurrence of stunting, but family income has a greater influence on the occurrence of stunting. And previous research revealed by Paramashanti et al. (2016) shows that exclusive breastfeeding is not the only factor causing stunting in children. Improving nutritional status from preconception and during pregnancy, as well as household economic status can reduce the problem of stunting in children

Discussion

Exclusive breastfeeding is the provision of breast milk (breast milk) alone and without additional food or other drinks to newborn babies up to six months of age. Exclusive breastfeeding has many benefits and is important for the health and development of babies. Exclusive breastfeeding can provide protection against infection, improve the immune system, and provide optimal nutrition for babies (Efendi et al., 2021). Exclusive breastfeeding has many health benefits for both baby and mother. For babies, exclusive breastfeeding can provide protection against infectious diseases, such as diarrhea and respiratory tract infections (Suryani et al., 2023). Breast milk contains antibodies that can help protect babies from attacks by viruses and bacteria. Apart from that, breast milk also contains important nutrients that babies need for optimal growth and development. Breast milk can also improve a baby's brain development and have a positive effect on cognitive development.

Apart from health benefits for the baby, exclusive breastfeeding also has health benefits for the mother (Amoo et al., 2022; María et al., 2020; Wiyono, 2022). Exclusive breastfeeding can help mothers recover after childbirth by speeding up uterine contractions and reducing the risk of bleeding. Breast milk can also help mothers regain weight after giving birth. Apart from that, exclusive breastfeeding can also reduce the risk of breast and ovarian cancer in mothers (Kelompok et al., 2024). Exclusive breastfeeding also has social and emotional benefits. The breastfeeding process can strengthen the relationship between mother and baby, creating a strong emotional bond between the two. Apart from that, exclusive breastfeeding can also provide a sense of accomplishment and pride for mothers who can provide breast milk for their babies.

Based on research conducted by Elba & Putri (2021), it was found that there was a significant influence between exclusive breastfeeding and the incidence of stunting. The results of other research conducted by Latifah et al. (2020), also shows that there is a relationship between exclusive breastfeeding and the incidence of stunting, with the chi square test value showing $p < 0.05$. Apart from that, research conducted by Latifah et al. (2020) also obtained similar results, with a p-value of 0.000 which shows that exclusive breastfeeding influences the incidence of stunting. Other research conducted by Tauhidah (2020), shows that there is a relationship between a history of exclusive breastfeeding and the incidence of stunting.

To achieve exclusive breastfeeding, mothers need to pay attention to several things. First, mothers need to breastfeed their babies as soon as possible after giving birth. Usually, the baby will show signs of being ready to breastfeed, such as looking for the nipple, opening his mouth, or sucking his finger. Next, mothers need to breastfeed their babies with sufficient frequency, namely around 8-12 times in 24 hours. Mothers also need to ensure the correct breastfeeding position and technique so that the baby can suck breast milk well.

Mothers also need to pay attention to their own diet and health. Mothers need to eat healthy and nutritious food so they can produce enough breast milk for their babies. Mothers also need to avoid foods and drinks that can interfere with breast milk production, such as alcohol and caffeine. Apart from that, mothers need to maintain their health and physical fitness so they can breastfeed well. Exclusive breastfeeding is very important in providing nutrition and protection for babies. Therefore, the government and various world health organizations encourage mothers to exclusively breastfeed their babies. Exclusive breastfeeding is the best choice for both baby and mother, and provides long-term benefits for their health and development. Adequate nutrition has

an important role in maintaining a person's health and quality of life (Latifah Al Ma'idatul et al., 2020). Adequate and balanced nutrition can provide the energy needed for daily activities, strengthen the immune system, and prevent various diseases and health problems. Apart from that, adequate nutrition also contributes to optimal growth and development, both in childhood and in adulthood (Syamsul & Sain, 2024). Breast milk contains various important nutrients that babies need for optimal growth and development (Syamsul & Sain, 2024).

Breast milk contains protein which is important for the growth and development of the baby's muscles. The protein in breast milk also contains essential amino acids that the baby's body cannot produce on its own. Breast milk contains carbohydrates which are the main source of energy for babies. Carbohydrates in breast milk are mainly lactose, which is easily digested by babies. Breast milk contains fat which is important for the development of the baby's brain and nervous system. The fat in breast milk also contains omega-3 and omega-6 fatty acids which are essential for optimal vision development and brain function. Breast milk contains various vitamins and minerals which are important for the growth and development of babies. Some examples of vitamins and minerals found in breast milk are vitamin A, vitamin D, vitamin E, vitamin K, calcium, iron and zinc (Chakona, 2020; Sukmawati et al., 2023).

Breast milk contains immunoglobulins, which are antibodies that help protect babies from infection and disease. The immunoglobulins in breast milk help strengthen the baby's immune system which is still not perfect (Lokal et al., 2023). It is important for breastfeeding mothers to ensure that they get enough nutrition to produce quality breast milk. Adequate nutrition will help meet the nutritional needs of mothers and babies, as well as ensure optimal breast milk quality.

Nursing mothers need to eat a balanced diet that contains a variety of nutrients, including protein, carbohydrates, fats, vitamins and minerals. A balanced diet can help ensure that mothers get enough nutrition to produce quality breast milk. Nursing mothers need to ensure that they drink enough water every day. Adequate water will help maintain body hydration and ensure adequate breast milk production. Nursing mothers can enrich their diet with foods rich in nutrients, such as green vegetables, fruits, whole grains, and dairy products. Nutrient-rich foods will help ensure that mothers get enough nutrition to produce quality breast milk. If breastfeeding mothers have concerns about their nutrition or the quality of breast milk, it is important to consult a nutritionist or doctor. They can provide the right advice and guidance to ensure that mothers get adequate nutrition and produce quality breast milk (Erkamim et al., 2023).

Stunting is a disruption in the growth and development of children due to chronic malnutrition and recurrent infections. Stunting is characterized by a child's length or height being below standard. Stunting is a chronic nutritional problem that occurs due to a lack of nutritional intake over a long period of time, resulting in impaired growth in children. Stunting is also one of the reasons why children's height is stunted, making it lower compared to children their age (Listiyaningsih et al., 2023). The main cause of stunting is long-term (chronic) malnutrition. Several conditions that can cause children to experience nutritional deficiencies and be at risk of stunting are as follows. First, the mother experiences malnutrition or develops an infection during pregnancy. Second, children do not receive exclusive breast milk (mother's milk). Third, the nutritional quality of complementary breast milk is poor. Fourth, children suffer from diseases that prevent the absorption of nutrients, such as cow's milk allergy or malabsorption syndrome. Fifth, children suffer from chronic infections, such as tuberculosis or worms. Sixth, the child has a congenital disease, such as congenital heart disease or thalassemia. Apart from the factors above, there are also risk factors that can increase the possibility of a child experiencing stunting, namely: (1) being born prematurely, (2) being born with a low body weight, (3) experiencing intrauterine growth restriction (IUGR), namely stunted growth. fetus in the womb due to long-term lack of nutrition, (4) not receiving complete vaccines, (5) living in poverty, (6) Living in an environment with poor sanitation and not having access to clean water.

The characteristics of children who experience stunting are characterized by a short body posture that is different from children their age. Some symptoms of stunting that can be recognized are as follows. First, the face looks younger than children his age. Second, delayed body and tooth growth. Third, have poor ability to focus and learning memory. Fourth, children experience delays in puberty. However, it is important to remember that not all short children can be called stunted, while children who are stunted definitely have a short height. Children are categorized as stunting when their height is less than -2.00 standard deviation (Kharnicova et al., 2024). Stunting usually begins to occur when the child is still in the womb and becomes visible when they are two years old. Stunting can have long-term impacts on a child's development, including health problems, stunted cognitive development, and reduced productivity in adulthood (Nurvitriana & Wijayanti, 2025).

CONCLUSION

The contributions the research found that exclusive breastfeeding have a significant influence on the incidence of stunting in children. Stunting is a condition of failure to thrive in children which is characterized by stunted physical growth. The results of the study show that exclusive breastfeeding during the first 6 months of a child's life can reduce the risk of stunting. In the context of stunting prevention, it is important to pay attention to education and support for mothers in providing exclusive breastfeeding. Good knowledge and understanding of the importance of exclusive breastfeeding can help mothers make the right decisions for their child's health and development. Apart from that, support from health workers and the community is also important in providing information and assistance to mothers in the practice of giving exclusive breastfeeding. Thus, collaborative efforts from various parties can contribute to reducing the incidence of stunting and improving the quality of life for children in the future. The limitation of this research is that it only examines a certain population. Future research should carry out further research with a wider research population.

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